

What is claimed:

1. An internet-based method for a paid service to maintain data connectivity of a remote medical device-configured patient to a database network and to enable medical device data exchange and processing, comprising the steps of:

receiving in a substantially continuous manner at a database network site first data inputs uniquely representative of sensed physiologic information from a specific medical device configuration of a patient using said medical device configuration;

enabling the database network site to communicate with at least one web-enabled web-site and to receive web-site originated signals requesting access to representations of said first data inputs from said database; and

monitoring data packages to determine revenue for the service.

2. The service method of claim 1 further including the step of providing said web-site and configuring said web-site with a user interface which includes a sign-in input to enable access to said database network site.

3. The service method of claim 1 in which the receiving step includes receiving at least one signal carrying information representing sensed physiologic status within the patient from at least one medical device located on or at least partially in the patient's body.

4. The service method of claim 1 in which the receiving step includes receiving signals carrying information representing actual physiologic phenomenon within the patient as sensed by at least one medical device located on or at least partially in the patient's body.

5. The service method of claim 1 in which the receiving step includes receiving signals carrying information representing actual physiologic

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phenomenon within the patient as sensed by a plurality of medical devices located on or at least partially in the patient's body.

6. The service method of claim 1 in which the enabling step comprises providing a secure sign-in and validating an originator's security-related action prior to allowing access of the originator to the database information.

7. The service method of claim 1 in which the first data inputs provides intermediate information to enable further production of data representations enabling subsequent actions.

8. An internet-based method for a paid service to maintain connection of a remote medical device configured patient to a database network and for medical device data exchange and processing comprising the steps of:

providing a web-site in a web-enabled system, the web-site having a user interface which includes a sign-in input to enable access to a database network site associated with said web-enabled system;

receiving in a substantially continuous manner at the database network site first data inputs uniquely representative of sensed physiologic information from a specific medical device configuration of a patient using said medical device configuration;

receiving at the web-site second data inputs requesting access to representations of said first data inputs available at said database; and

enabling the originator of said second data inputs to have access to the database via the secure web site to view representations of said first data inputs.

9. The service method of claim 8 in which the database network site receiving step includes receiving at least one signal carrying information

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representing sensed physiologic status within the patient from at least one medical device located on or at least partially in the patient's body.

10. The service method of claim 8 in which the database network site receiving step includes receiving signals carrying information representing actual physiologic phenomenon within the patient as sensed by at least one medical device located on or at least partially in the patient's body.

11. The service method of claim 8 in which the database network site receiving step includes receiving signals carrying information representing actual physiologic phenomenon within the patient as sensed by a plurality of medical devices located on or at least partially in the patient's body.

12. The service method of claim 8 in which the enabling step comprises providing a secure sign-in and validating an originator's security-related action prior to allowing access of the originator to the database information.

13. The service method of claim 8 in which the first data inputs provides intermediate information to enable further production of data representations enabling subsequent actions.

14. An internet-based method for a paid service to maintain data connectivity of a remote medical device-configured patient to a database network and to enable medical device data exchange and processing, comprising the steps of:

receiving in a substantially continuous manner at a database network site first data inputs uniquely representative of sensed physiologic information from a specific medical device configuration of a patient using said medical device configuration;

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initiating processing of said first data inputs to produce user accessible signals which represent the first data inputs in a user accessible format to enable action based on observations of the user accessible signals; and

enabling the database network site to communicate with at least one web-enabled web-site and to receive web-site originated signals requesting access to representations of said first data inputs from said database.

15. The service method of claim 14 in which the step of initiating processing includes initiating analysis of the first data inputs to determine whether any sensed physiologic activity is abnormal.

16. The service method of claim 14 in which the step of initiating processing includes initiating analysis of the first data inputs to determine actual values for any sensed physiologic activity.

17. The service method of claim 14 in which the step of initiating processing includes initiating analysis of the first data inputs to determine whether any sensed physiologic activity is indicative of a demonstrable or likely pattern of physiological activity.

18. An internet-based method for a paid service to maintain data connectivity of a remote medical device-configured patient to a database network and to enable rapid medical device data exchange and processing of certain conditions, comprising the steps of:

receiving in a substantially continuous manner at a database network site first data inputs uniquely representative of sensed physiologic information from a specific medical device configuration of a patient using said medical device configuration; and

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enabling the database network site to communicate with at least one web-enabled web-site to automatically deliver representations of said first data inputs from said database when certain conditions are met.

19. The service method of claim 18 in which the step of enabling includes initiating automatic software analysis of the first data inputs to determine whether any sensed physiologic activity is abnormal.

20. The service method of claim 18 in which the step of enabling includes initiating automatic software analysis of the first data inputs to determine actual values for any sensed physiologic activity.

21. The service method of claim 18 in which the step of enabling includes initiating automatic software analysis of the first data inputs to determine whether any sensed physiologic activity is indicative of a demonstrable or likely pattern of physiological activity.

22. A computer implemented method for improved data management in the healthcare industry by increasing patient engagement with recommended healthcare delivery modalities, comprising the steps of:

a. providing an implanted medical device configured for automatic sensing of high relevance biologic data of the patient and transmitting that data, or portions thereof, to an information parser of the healthcare professional;

b. configuring a patient accessible electronic interface to receive signals representative of sensed high relevance biological data of the patient;

c. providing selectively programmable computer implemented rapid interpretations of the sensed high relevance biologic data and, when indicated, electronically sharing with the healthcare professional the details of the sensed

high relevance biological data without resort to personal contact or face to face meeting between the healthcare professional and the patient; and

d. providing information flow paths for the healthcare professional to further contribute to the knowledge database and patient engagement by offering the patient and a patient's designated advocate direct information about the high relevance biologic data thereby actively engaging the patient in a highly content rich yet efficient manner.

23. A computer implemented internet-based method for an improved connect and monitoring service to rapidly connect remote persons to a database network for medical device data exchange and analysis, said method being characterized in that it comprises the steps of:

providing a web-site having a user interface wherein the user interface includes a secure sign-in input to access a database network site;

receiving at the web-site automatic inputs associated with a specific medical device and user of the device;

automatically confirming the identity of the medical device and the user;

enabling the user to access the database via the web-site to use the service for real time monitoring of high relevance physiologic data mined from all monitored data of the user; and

enabling the database network site to communicate with at least one web-enabled web-site and to receive web-site originated signals requesting access to the database.

24. The method of claim 23 wherein said web-site further includes a proxy right access scheme to provide privileged access to a user's data by friends or family as programmed.

25. A computer implemented internet-based method for improved user compliance within a medical patient management system in which the system

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automatically determines which connection protocols to follow to rapidly connect one or more remote persons to a database network for medical device data exchange and analysis under certain conditions, said method being characterized in that it comprises the steps of:

providing a web-site having a user interface wherein the user interface includes a secure sign-in input protocol to access a database network site;

receiving at the web-site automatic inputs associated with a specific medical device and user of the device;

automatically confirming the identity of the medical device and the user;

performing computer implemented analyses to determine which user groups to rapidly and selectively automatically access the database via the web-site for receipt of high relevance physiologic data mined from all monitored data of the user; and

enabling the database network site to communicate with at least one web-enabled web-site and to receive web-site originated signals requesting access to the database.

26. The computer implemented internet-based method for improved user compliance of claim 25 further comprising:

alerting a select group of medical providers to an event using an event service; and

enabling the select group of medical providers to execute secure access to the device user's database in a single sign-on action per user in the group.

27. The method of claim 26, wherein said single sign-on action includes authentication to a foreign web-site that is passed over to access the secure device user's database.

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28. The method of claim 25 further characterized by computer implemented automatic formatting of automatically processed high relevance data mined from all detected data, and electronically pushing the formatted data to an electronic display of at least one member of a group of medical providers whereby at least one of the group of medical providers selectively provides commentary and then directs a data transmission back via the web site to the user of the medical device, to a designated advocate of the user of the medical device, and, optionally, to another member of a medical providers group.

29. A computer implemented patient management network configured for automatically determining which connection protocols to follow to rapidly connect one or more remote persons to a database network for medical device data exchange and analysis, said network being characterized in that it comprises:

a web site having a user interface wherein the user interface includes a secure sign-in input protocol to access a database network site;

said web site providing for acceptance of automatic inputs to the web site associated with a specific medical device and user of the device;

processing routines and module for automatically confirming the identity of the medical device and the user; and

processing routines and module for performing computer implemented analyses to determine which user groups to rapidly and selectively automatically access the database via the web-site for receipt of high relevance physiologic data mined from all monitored data of the user.

means for enabling the database network site to communicate with at least one web-enabled web-site and to receive web-site originated signals requesting access to the database.

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30. A system for implementing a disease management service for a remote chronic patient with an implantable medical device and/or wearable device wherein the service includes multi-users of data and information exchange systems cooperating to provide the service for continuously managing the chronic patient's disease, health care and medical devices comprising:

a server hosting medical and physiological data collected from the patient;

a physician station in data communications with the server;

a health care system information network being in a bi-directional communication with the physician station and further having a data communication with the server;

a disease management organization in bi-directional communications with said health care system information network;

said server including at least one set of database of information concerning the patient wherein the database is structured to assist the disease management organization to manage the patient for a fee; and

said server including means for enabling the database to communicate with at least one web-enabled web-site and to receive web-site originated signals requesting access to the database.

31. A system for implementing a disease management service for a remote chronic patient with an implantable medical device and/or wearable device wherein the service includes multi-users of data and information exchange systems cooperating to provide the service for continuously managing the chronic patient's disease, health care and medical devices comprising:

a server hosting medical and physiological data collected from the patient;

a physician station in data communications with the server;

a health care system information network being in a bi-directional communication with the physician station and further having a data communication with the server;

a disease management organization in bi-directional communications with said health care system information network;

said server including at least one set of database of information concerning the patient wherein the database is structured to assist the health care system information network to manage the patient for a fee; and

said server including means for enabling the database to communicate with at least one web-enabled web-site and to receive web-site originated signals requesting access to the database.

32. A system for implementing a disease management service for a remote chronic patient with an implantable medical device and/or wearable device wherein the service includes multi-users of data and information exchange systems cooperating to provide the service for continuously managing the chronic patient's disease, health care and medical devices comprising:

a server hosting medical and physiological data collected from the patient;

a physician station in data communications with the server;

a health care system information network being in a bi-directional communication with the physician station and further having a data communication with the server;

said server including at least one set of database of information concerning the patient wherein the database is structured to assist the health care system information network to manage the patient for a fee; and

said server including means for enabling the database to communicate with at least one web-enabled web-site and to receive web-site originated signals requesting access to the database.

33. A system for implementing a disease management service for a remote chronic patient with an implantable medical device and/or wearable device wherein the service includes multi-users of data and information exchange systems cooperating to provide the service for continuously managing the chronic patient's disease, health care and medical devices comprising:

a server hosting medical and physiological data collected from the patient;

a physician station in data communications with the server;

a disease management organization in bi-directional communications with said server and said physician station;

said server including at least one set of database of information concerning the patient wherein the database is structured to assist the disease management organization to manage the patient for a fee; and

said server including means for enabling the database to communicate with at least one web-enabled web-site and to receive web-site originated signals requesting access to the database.

34. A data collection and transfer system for implementing a chronic remote patient monitoring service for transmission of very high relevance medical and physiological data from a person having at least one implanted and/or wearable medical device, the service comprising:

a server hosting high relevance medical and physiological data accessible via a remote monitor in data communications with the server;

at least one medical device implanted or wearably located on a person being in data communication with the remote monitor;

the server being web-enabled to host and provide multi-directional data collections from various services including said person so that the collected data may be re-transmitted for a fee provided by one or more recipients of the data; and

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the server including means for enabling the database to communicate with at least one web-enabled web-site and to receive web-site originated signals requesting access to the database.

35. The service of claim 34 wherein said at least one implanted and/or wearable medical device is in wireless communication with the remote monitor to enable data communications when the person is ambulatory.

36. The service of claim 34 wherein said server includes programmable parameters to bill the person for services rendered.

37. A system for implementing a computerized healthcare information service network capable of collecting medical data from various remote locations including a patient with a medical device, the information service comprising:

a server including a database hosting medical and physiological data collected from a patient at a remote location, said server being in data communications with a remote monitor that collects highly relevant data from the patient having at least one implanted and/or externally worn medical device;

the server including means for enabling the database to communicate with at least one web-enabled web-site and to receive web-site originated signals requesting access to the database;

a physician station;

a health care system information network in data communications with the server and the physician station; and

a billing service for the remote management of the patient's health including a service of the performance of at least one implanted and/or externally worn medical device communicating with the physician station for

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expert opinion and advising the patient in real time, to provide as to proper procedures to follow for therapy and medical care.

38. A network-enabled system for implementing a chronic data management and monitoring service for remote patients and medical devices comprising:

a server computer hosting high relevance data transmitted from the remote patients and medical devices;

a client computer providing access to a plurality of users of the service; and

wherein said server computer provides a user interface whereby said plurality of users are authenticated prior to accessing said data;

whereby the service is available via one of a secure Internet channels to enable an authenticated user to access data pertaining to a specific patient and/or medical device.

39. The service of claim 38 wherein said service utilizes billing and collection systems consisting of one of: computer to computer transactions, monthly statements, direct credit card transfer, micro-payment-systems and business to business collection systems.

40. An internet-based information network service for implementing medical data transfer and exchange in a health care system comprising:

means for collecting medical data from multiple remote sites including a database site; and

interface means for accessing said means for collecting by authorized agents;

wherein said interface means includes controls for authenticating a user for the service and provides selection criteria and display at any one of said multiple remote sites for the user; and

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means for enabling the database network site to communicate with at least one web-enabled web-site and to receive web-site originated signals requesting access to the database.

41. An information system for generating medical device performance data, in real time, to enhance product performance and adapt businesses methods to provide a continuously improving service to a chronic patient or other information users, the information system comprising:

a server hosting data transmitted from a remote patient;

a plurality of client computers providing access to the server; and

a medical device manufacturer computer being in data communications with the server wherein device data is managed to provide at least one functional group within a medical device manufacturer with highly relevant information derived from the medical device performance data for use in product or service improvement actions.

42. The system of claim 41, in which the functional sub-group is one of: research and development, product planning, post market surveillance, and sales and marketing.

43. The system of claim 41, in which the other information users include one of disease management organizations and healthcare management organizations.

44. A system for implementing networked remote patient management services comprising:

a server hosting high relevance patient management data for providing chronic monitoring of the remote patients with chronic disease having implantable medical devices and/or wearable devices; and

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said server being accessible via client computers wherein said client computers include a web-enabled system, a medical device manufacturer web-site, a physician site, a health care information network site, and a disease management organization; and

each of said client computers being in data communications with the server to import specific data on which the patient management services billing schemes, for at least one service, are implemented.

45. An internet-based method in a web-enabled system for a paid service to connect a remote patient to a database network for medical device data exchange and processing comprising the steps of:

providing a web-site in a web-enabled system, the web-site having a user interface which includes a secure sign-in input to access a database network site associated with said web-enabled system;

automatically receiving at the database network site first data inputs uniquely associated with a specific medical device and patient using said medical device;

receiving at the web-site second data inputs requesting access to representations of said first data inputs;

confirming the identity of the medical device, the patient, and the originator of said second data inputs; and

enabling the originator of said second data inputs to have access to the database to view representations of said first data inputs.

46. An internet-based method in a web-enabled system for a paid service to connect a remote patient to a database network for medical device data exchange and processing comprising the steps of:

providing a web-site in a web-enabled system, the web-site having a user interface which includes a secure sign-in input to enable access to a database network site associated with said web-enabled system;

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periodically receiving at the database network site first data inputs uniquely associated with a specific medical device and patient using said medical device;

receiving at the web-site second data inputs requesting access to representations of said first data inputs;

confirming the identity of the medical device, the patient, and the originator of said second data inputs; and

enabling the originator of said second data inputs to have access to the database via the secure web site to view representations of said first data inputs.